

**PATENT**  
**(5760-16400/VRTS-0502)**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 10/706,742

Filed: November 12, 2003

Inventor(s):

Hans F. van Rietschote

Mahesh P. Saptarshi

Craig W. Hobbs

Title: Provisioning and  
Snapshotting Using Copy  
on Read/Write and  
Transient Virtual Machine  
Technology

§ Examiner: Unknown  
§ Group/Art Unit: 2186  
§ Atty. Dkt. No: 5760-16400  
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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

Lawrence J. Merkel

Name of Registered Representative

Signature

Date

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicant requests consideration of ☒ the references listed on the attached Form PTO-1449 and/or ☒ the additional information identified below in paragraph 3.

- ☒ A copy of each required reference listed on the Form PTO-1449 is enclosed.
- ☐ The references listed on the Form PTO-1449 were previously cited in application serial no. \_\_\_\_\_ to which the captioned application is seeking priority under 35 U.S.C. §120; therefore, a copy of each reference is not enclosed.
- ☒ The present application is a U.S. national patent application filed after June 30, 2003, or an international application that entered the national stage under 35 USC § 371 after June 30, 2003. Therefore, copies of the cited U.S. patents and/or U.S. patent application publications are not enclosed.

1. This Information Disclosure Statement is submitted:

- a. ☐ within 3 months of the filing date of a national application other than a continued prosecution application under § 1.53(d);

- ☐ within 3 months of the date of entry of the national stage as set forth in § 1.491 in an International application;
- ☒ before the mailing date of a first Office Action on the merits; or
- ☐ before the mailing of a first Office Action after the filing of a request for continued examination under § 1.114.
- b. ☐ after the events of above paragraph 1a and prior to the mailing date of a final Office Action or Notice of Allowance, and thus: ☐ the certification of paragraph 2 below is provided, or ☐ a fee of \$180.00 is enclosed.
- c. ☐ after the mailing date of a final Office Action or a Notice of Allowance and prior to payment of the issue fee, and thus: the certification of paragraph 2 below is provided and a fee of \$180.00 is enclosed.

2. It is hereby certified:

- ☐ that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in § 1.56(c) more than thirty (30) days prior to the filing of the information disclosure statement;
  - ☐ that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of the Statement; or
  - ☐ that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in § 1.56 (c) more than three (3) months prior to the filing of the Statement.
3. ☒ Consideration of the following additional information (including any co-pending or abandoned U.S. applications, prior uses and/or sales, etc.) is requested:

U.S. Patent Application Serial No. 10/108,882 (5760-00200)  
U.S. Patent Application Serial No. 10/109,406 (5760-00300)  
U.S. Patent Application Serial No. 10/140,614 (5760-01300)  
U.S. Patent Application Serial No. 10/616,437 (5760-12200)  
U.S. Patent Application Serial No. 10/669,931 (5760-13900)  
pp. 1-3 entitled "Background of the Invention" from the specification of the captioned application.

4. For each non-English language reference listed on the attached Form PTO-1449:

- ☐ reference is made to an English language translation submitted herewith, and/or
- ☐ reference is made to a foreign patent office search report (in the English language) submitted herewith, and/or

- ☐ reference is made to an English language translation of a foreign patent office search report submitted herewith, and/or
- ☐ reference is made to the concise explanation contained in the specification of the present application at page(s) \_\_\_\_\_, and/or
- ☐ reference is made to the concise explanation set forth below:
5. ☐ Applicant also offers the following comments for the Examiner's consideration:
6. ☐ Also enclosed is a copy of a foreign search report citing these references.
7. ☐ The listed documents were brought to the attention of the Applicant(s) after payment of the issue fee in the captioned case. The documents were cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. Applicant(s) request this Information Disclosure Statement and attached Form PTO-1449 be placed in the file of the captioned application.
8. ☐ Applicant(s) requests that the Information Disclosure Statement and attached Form PTO-1449 and references, which are being filed before the grant of the patent and pursuant to 37 C.F.R. § 1.97(i), be placed in the file of the captioned application.

If any required fees are missing, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzl, P.C. Deposit Account No. 501505/5760-16400/LJM.

Respectfully submitted,



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Date: 4/14/04

**Form PTO-1449** (modified)  
List of Patents and Publications  
For Applicant's Information  
Disclosure Statement  
(Use several sheets if necessary)

ATTY. DKT. NO. 5760-16400

APPLICANT: van Rietschote, et al.

FILING DATE: 11/12/03

SERIAL NO. 10/706,742

GROUP: 2186

**U.S. PATENT DOCUMENTS**

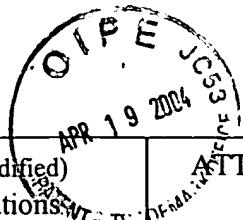
EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
		6,370,614	4/9/02	Teoman, et al.			
		6,496,847	12/17/02	Bugnion, et al.			
		6,397,242	5/28/02	Devine, et al.			
		6,075,938	6/13/00	Bugnion, et al.			
		5,408,617	4/18/95	Yoshida			
		5,257,386	10/26/93	Saito			
		6,151,618	11/21/00	Wahbe, et al.			
		2003/0033431	2/13/03	Shinomiya			
		2001/0016879	8/23/01	Seklguchi, et al.			
		5,944,782	8/31/99	Noble, et al.			
		5,872,931	2/16/99	Chivaluri			
		5,852,724	12/22/98	Glenn, II, et al.			
		6,029,166	2/22/00	Mutalik, et al.			
		6,363,462	3/26/02	Bergsten			
		6,341,329	1/22/02	LeCrone, et al.			
		6,324,627	11/27/01	Kricheff, et al.			
		6,298,428	10/2/01	Munroe, et al.			
		6,298,390	10/2/01	Matena, et al.			
		5,621,912	4/15/97	Borruso, et al.			
		4,969,092	11/6/90	Shorter			
		4,912,628	3/27/90	Briggs			
		6,230,246	5/8/01	Lee, et al.			
		6,493,811	12/10/02	Blades, et al.			
		6,438,642	8/20/02	Shaath, Kamel			

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Information Disclosure Statement--PTO 1449 (modified)



<b>Form PTO-1449</b> (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)	ACTY. DKT. NO. 5760-16400  APPLICANT: van Rietschote, et al.  FILING DATE: 11/12/03	SERIAL NO. 10/706,742  GROUP: 2186
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**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

	A1	VERITAS Software Corporation, "Comprehensive Application Performance Management with Veritas i <sup>3</sup> ™," 2003, 3 pages.
	A2	VERITAS Software Corporation, "VERITAS Enterprise Server Automation," 2003, 8 pages.
	A3	VERITAS Software Corporation, "Server Consolidation with VERITAS OpForce; Optimizing your Infrastructure Availability and Utilizations," 2003, 6 pages.
	A4	VERITAS Software Corporation, "Server Automation with VERITAS OpForce; Enterprise Operations Automation-Enhancing Workflows, Administration, and Management," 2003, 6 pages.
	A5	VERITAS Software Corporation, "Rapid Server Deployment with VERITAS OpForce; The Enterprise-Scale, Server Deployment Solution for Heterogeneous Environments," 2003, 6 pages.
	A6	VERITAS Software Corporation, "High Availability Clustering in a Microsoft Windows Environment; VERITAS Cluster Server for Microsoft Windows NT" 2000, 20 pages.
	A7	VERITAS Software Corporation, "VERITAS Cluster Server v2.0; Technical Overview," 2001, 12 pages.
	A8	VERITAS Software Corporation, "Managing Application Availability with Application Clustering and the VERITAS Cluster Server Version 2.0," 2002, 32 pages.
	A9	Sapuntzakis, et al., "Optimizing the Migration of Virtual Computers," Proceedings of the Fifth Symposium on Operating Systems Design and Implementation, December 2002, 14 pages.
	A10	Helfrich, et al., "Internet Suspend/Resume," ISR Project Home Page, 2003, 4 pages.
	A11	Kozuch, et al., "Internet Suspend/Resume," IRP-TR-02-01, April 2002, Accepted to the Fourth IEEE Workshop on Mobile Computing Systems and Applications, Callicoon, NY, June 2002, Intel Research, 9 pages.
	A12	Kozuch, et al., "Efficient State Transfer for Internet Suspend/Resume," IRP-TR-02-03, May 2002, Intel Research, 13 pages.
	A13	Tolia, et al., "Using Content Addressing to Transfer Virtual Machine State," IRP-TR-02-11, Summer 2002, Intel Research, 11 pages.
	A14	Flinn, et al., "Data Staging on Untrusted Surrogates," IRP-TR-03-03, March 2003, Intel Research, To Appear in the Proceedings of the 2 <sup>nd</sup> USENIX Conference on File and Storage Technologies, San Francisco, 16 pages.
	A15	Tolia, et al., "Opportunistic Use of Content Addressable Storage for Distributed File Systems," IRP-TR-03-02, June 2003, Intel Research, To Appear in the Proceedings of the 2003 USENIX Annual Technical Conference, San Antonio, TX, 16 pages.
	A16	VMware, Inc., "VMware Control Center," 2003, 3 pages.
	A17	InfoWorld, Robert McMillan, "VMware Launches VMware Control Center," 2003, 2 pages.
	A18	VMware, Inc., "VMware Control Center: Enterprise-class Software to Manage and Control Your Virtual Machines," 2003, 2 pages.
	A19	John Abbott, Enterprise Software, "VMware Heads Toward Utility Computing With New Dynamic Management Tools," July 1, 2003, 4 pages.

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<b>Form PTO-1449</b> (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5760-16400  APPLICANT: van Rietschote, et al.  FILING DATE: 11/12/03	SERIAL NO. 10/706,742  GROUP: 2186
<b>OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
	A20	Dejan S. Milogicic, et al., "Process Migration," August 10, 1999, 49 pages.	
	A21	Xian-He Sun, et al., "A Coordinated Approach for Process Migration in Heterogeneous Environments," 1999, 12 pages.	
	A22	Kasidit Chanchio, et al., "Data Collection and Restoration for Heterogeneous Process Migration," 1997, 6 pages.	
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	A25	OpenMosix, "The openMosix HOWTO: Live free() or die (), " May 7, 2003, 3 pages.	
	A26	OpenMosix, "openMosix Documentation Wiki - don't," May 7, 2003, 2 pages.	
	A27	Veritas, "Executive Overview," Technical Overview, pages 1-9.;	
	A28	Kinshuk Govil, et al., "Cellular Disco: Resource Management Using Virtual Clusters on Shared-Memory Multiprocessors," 17 <sup>th</sup> ACM Symposium on Operating Systems Principles (SOSP'99), Published as Operating Systems Review 34(5):154-169, December 1999, pages 154-169.	
	A29	Edouard Bugnion, et al., "Disco: Running Commodity Operating Systems on Scalable Multiprocessors," Computer Systems Laboratory, Stanford, CA, 33 pages.	
	A30	"White Paper, GSX Server," VMware, Inc., December 2000, pages 1-9.	
	A31	"Vmware GSX Serve, The Server Consolidation Solution," VMware, Inc., 2001, 2 pages.	
	A32	"Manage Multiple Worlds., From Any Desktop," VMware, Inc., 2000, 2 pages.	
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	A34	Melinda Varian, "VM and the VM Community: Past, Present, and Future," Operating Systems, Computing and Information Technology, Princeton Univ., August 1997, pp. 1-67.	
	A35	VERITAS, "Comparison: Microsoft Logical Disk Manager and VERITAS Volume Manager for Windows," May 2001, 4 pages.	
	A36	VERITAS, " How VERITAS Volume Manager Complements Hardware RAID in Microsoft Server Environments," May 2001, pp. 1-7.	
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	A38	Barrie Sosinky, Ph.D., "The Business Value of Virtual Volume Management, In Microsoft Window NT and Windows 2000 Netowrks," VERITAS, A white paper for administrators and planners, October 2001, pp.1-12.	
	A39	VERITAS, "VERITAS Volume Manager for Windows NT," Version 27, 2001, 4 pages.	
	A40	"BladeFram™ System Overview," Egenera, Inc., 2001 2 pages.	
	A41	White Paper, "The Egenera™ Processing Area Network (PAN) Architecture," Egenera, Inc., 2002, 20 pages.	

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<b>OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
	A42	White Paper, "Emerging Server Architectures," Egenera, Inc., 2001, 12 pages.	
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	A44	White Paper, "Guidelines for Effective E-Business Infrastructure Management," Egenera, Inc., 2001, 11 pages.	
	A45	White Paper, "The Pros and Cons of Server Clustering in the ASP Environment," Egenera, Inc., 2001, 10 pages.	
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	A47	Position Paper, "The Linux Operating System: How Open Source Software Makes Better Hardware," Egenera, Inc., 2001, 2 pages.	
	A48	"Solution Overview," TrueSAN Networks, Inc., 2002, 7 pages.	
	A49	"Simics: A Full System Simulation Platform," Reprinted with permission from Computer, February 2002, © The Institute of Electrical and Electronics Engineering, Inc., pp. 50-58.	
	A50	"Introduction to Simics Full-System Simulator without Equal," Virtutech, July 8, 2002, 29 pages.	
	A51	"The Technology of Virtual Machines," A Conneectix White Paper, Connectix Corp., 2001, 13 pages.	
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	A53	"About LindowsOS," Lindows.com, <a href="http://www.lindows.com/lindows_products_lindowsos.php">http://www.lindows.com/lindows_products_lindowsos.php</a> , 2002, 2 pages.	
	A54	"Savannah: This is a Savannah Admin Documentation," Savannah, Free Software Foundation, Inc.© 2000-2002, 31 pages.	
	A55	"Virtuozzo Basics," Virtuozzo, <a href="http://www.sw-soft.com/en/products/virtuozzo/basics/">http://www.sw-soft.com/en/products/virtuozzo/basics/</a> , © 1994-2002 SWsoft, printed from web on 12/13/2002, 2 pages.	
	A56	"What is Virtual Environmnet(VE)?," SWsoft, <a href="http://www.sw-soft.com/en/products/virtuozzo/we/">http://www.sw-soft.com/en/products/virtuozzo/we/</a> , © 1994-2002 SWsoft, printed from web on 12/13/2002, 2 pages.	
	A57	"Products," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/index.php">http://www.netraverse.com/products/index.php</a> , printed from web on 12/13/2002, 1 page.	
	A58	"NeTraverse Win4Lin 4.0 - Workstation Edition," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/win4lin40/">http://www.netraverse.com/products/win4lin40/</a> , printed from web on 12/13/2002, 1 page.	
	A59	"Win4Lin Desktop 4.0," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/win4lin40/benefits.php">http://www.netraverse.com/products/win4lin40/benefits.php</a> , printed from web on 12/13/2002, 1 page.	
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	A61	"Win4Lin Desktop 4.0," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/win4lin40/requirements.php">http://www.netraverse.com/products/win4lin40/requirements.php</a> , printed from web on 12/13/2002, 2 page.	

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<b>OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
	A62	"Win4Lin Terminal Server 2.0," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/wts">http://www.netraverse.com/products/wts</a> , printed from web on 12/13/2002, 1 page.	
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	A64	Win4Lin Terminal Server 2.0," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/wts/features.php">http://www.netraverse.com/products/wts/features.php</a> , printed from web on 12/13/2002, 2 pages.	
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	A66	Win4Lin Terminal Server 2.0," Netraverse, Inc, 2002, <a href="http://www.netraverse.com/products/wts/technology.php">http://www.netraverse.com/products/wts/technology.php</a> , printed from web on 12/13/2002, 1 page.	
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	A69	Dave Gardner, et al., "WINE FAQ," © David Gardner 1995-1998, printed from <a href="http://www.winehq.org">www.winehq.org</a> , 13 pages.	
	A70	"Winelib User's Guide," Winelib, <a href="http://www.winehq.org">www.winehq.org</a> , 26 pages.	
	A71	John R. Sheets, et al. "Wine User Guide," <a href="http://www.winehq.org">www.winehq.org</a> , pages 1-53.	
	A72	"Wine Developer's Guide," pages, <a href="http://www.winehq.org">www.winehq.org</a> , 1-104.	
	A73	VERITAS, "VERITAS Volume Replicator™ White Paper, A Guide to Understanding VERITAS Volume Replicator," White Paper, 2002, 15 pages.	
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